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AUTHOR Bank, Adrianne; Snidman, Nancy
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ABSTRACT

The Center for the Study of Evaluation (CSE) developed a formative evaluation system for the National Diffusion Network (NDN). A national, federally funded organization, NDN disseminates innovative ideas to schools nationwide. A formative evaluation was designed as an ongoing low-cost series of activities to be carried out by NDN managers, Developer/Demonstrators (D/Ds) or State Facilitators (SFs). The conceptualization process involved CSE encouraging NDN personnel to consider purposes, outcomes, and uses for a formative evaluation of each project. NDN practitioners and leadership revealed their perception of evaluation needs which would be of benefit to them. The resources Guidebook evolved into two sections. The first included instructions generic to evaluation and the second contained NDN specific information. A category of dissemination tasks, Certified Trainer operations was added to the Guidebook during the development phase. Awareness activities, training in evaluation guidebook use and technical assistance comprised the implementation stage. The CSE acted as product developer as well as evaluator in this project. (DOH)

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CREATING A SUPPORT SYSTEM FOR DOING FORMATIVE EVALUATION WITHIN THE NATIONAL DIFFUSION NETWORK

Adrianne Bank
and
Nancy Snidman

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Preface

This paper reflects experiences during two years of working with a dynamic and complex organization, the National Diffusion Network (NDN). Under subcontract to The Network, Inc., of Andover, Massachusetts, the Center for the Study of Evaluation was to develop a formative evaluation system for the NDN. A major result of the project was the development of a three-hundred page manual, Guidebook for Evaluation Dissemination Activities: Resources for NDN Practitioners.

What the NDN is and does, and what the evaluation task was intended to accomplish and how it was handled is the subject of the following story. After introductory explanations, it is divided into four sections--Conceptualization: A Knowledge Exchange Process; Development: A Stakeholder Strategy; Implementation: Ideas as Innovation; and Reflections. These titles suggest but do not fully capture the unique processes and the inventive ideas which surfaced due, in part, to the open, problem-solving spirit which existed between professional educators possessing different skills. Some of the flavor is indicated by phrases such as: appropriate levels of leadership and support, mutual respect, tolerance of initial ambiguities, willingness to listen to one another, competence and ongoing attention to details.

Although the details of this account are particular to this situation, our two-year experience may be relevant to a wide range of individuals--such as consultants, change agents, product developers, evaluators--who work in an interactive capacity with groups or organizations.

CREATION OF A SUPPORT SYSTEM FOR DOING FORMATIVE EVALUATION
WITHIN THE NATIONAL DIFFUSION NETWORK

The Organizational Context

The National Diffusion Network (NDN) began life in 1974 as an idea for disseminating to schools throughout the country, innovations which had been produced by teachers or others using federal funds. Very simply, federally-supported programs which had been developed, implemented, and evaluated in public schools were eligible to submit their evaluations to an intergovernmental Joint Dissemination Review Panel. If the evaluations had been competently done and if the data indicated that the programs were effective according to certain criteria, program personnel could then compete for NDN funds. These funds enabled Developer/Demonstrators (D/Ds) --often teachers or others associated with the original development effort --to travel the country encouraging interested schools to adopt their program. Providing administrative assistance in this effort were State Facilitators (SFs)--individuals usually but not always located within State Department of Education offices--who, often on a part-time basis, assisted the D/Ds in their work with local schools.

The NDN as an organization did not originate from a master plan for disseminating innovative programs; rather, the loose confederation of individuals who came to constitute the NDN confronted dissemination issues as they emerged from their work. Over the years, discussions at national conferences and in smaller group meetings focused on such core topics as the respective roles of D/Ds and SFs in dissemination; the breadth of dissemination tasks which began with awareness and proceed through

adoption and follow-up technical assistance; the definition of "adoption" by a participating school; the inevitability of resource exhaustion when an NDN'er simultaneously tried for large numbers of adoptions and high quality adoptions; the psychological and technical supports required by NDN participants themselves.

By the time the Center for the Study of Evaluation began to develop a formative evaluation system for the NDN, there had been several generations of D/Ds and SFs. Some characteristics of the organization and its members as we came to know them include the following:*

1. Policies and directions for the NDN seem to emerge over time rather than be announced in anticipation of events. Partly because of the diversity of the membership, partly because of the intentions of the leadership, issues undergo lengthy field discussion before decisions are reached. Only when the frustration level of the membership becomes so high as to be distracting, or when external events necessitate action, do requirements, mandates, and directions appear as policy statements.

2. Programs disseminated by the NDN are very varied. They range from highly prescriptive innovations which require substantial training of teachers and considerable change in the procedures of the adopting school, to short-term or diffuse innovations that are supplemental to usual instruction.

3. Most NDN'ers are part-timers. D/Ds often maintain some responsibilitys in their local district; SFs have responsibilities supplied by other sources of federal and state money. Each NDN'er is therefore unique in the web of affiliations in which he or she is enmeshed.

4. Most D/Ds and SFs are new to dissemination when they enter the NDN. Though they have had other jobs in education before undertaking dissemination. During the '70s, the field of dissemination itself was undergoing definition, so the early NDN'ers invented their jobs as they went. Later NDNers have come into a somewhat more coherent set of procedures. Nonetheless, even now, new as well as experienced D/Ds and SFs feel that they must create dissemination activities to fit their own individual situation and program.

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*The examples provided are impressionistic, incomplete, and based on our experience. The characteristics described are those that were salient to us as we began to think about evaluation in relation to this organization and its members.

6. Dissemination practice in the NDN is influenced by the experiences and professional knowledge of individuals who share "what works" with one another. There is only a limited body of research to be drawn upon, in any event, and NDN'ers as a group appear to trust their own judgment in deciding how to do their jobs. This view is reinforced, organizationally, by the absence of job descriptions, how-to-do-it manuals, or even routine orientations for new members of the NDN.

6. Most NDN'ers are interested in their own professional development. They are ususally unafraid to learn new skills or tasks.

7. Many NDN'ers have negative or neutral associations with evaluation, perhaps rooted in their teaching experience or in their unfamiliarity with evaluation as distinct from testing.

The task to be done

It was within this organizational milieu that we were to conceptualize the term "formative evaluation." Our Scope of Work called for the "establishment of a formative evaluation system for the NDN." Formative evaluation was a term coined by Michael Scriven in 1967 to make a general distinction between those systematic data collection activities designed to improve or "form" the functioning of an organization or program, and those summative data collection activities designed to judge its worth or merit. However, the particulars of formative evaluation in the NDN--what, who, when and how--were not defined for us.

A brief review of the images held by people associated with the NDN about the purposes of formative evaluation for this organization revealed a range of perceptions. Some wanted a formative evaluation system that would get individual D/Ds and SFs to "clean up their act" and manage their dissemination activities more effectively. Others wanted formative evaluation to function as "capacity building,"--they wanted NDN'ers to

learn about evaluation in an easy way and go on to conduct or participate in more difficult summative evaluations. Still others connected a formative evaluation system to existing NDN reporting requirements--they saw the proposed evaluation activities as a way of making more credible the collection of statistics which D/Ds and SFs reported to the NDN Division (NDND).

These diverse views of formative evaluation, combined with the complexity of the NDN as an organization and the particular decision-making norms accepted by the leaders and members of the NDN, presented a series of formidable challenges for us.

Before describing the way in which these challenges were met in the conceptualization, development and implementation of the formative evaluation system, it is important to summarize what we came to view as some of the needed elements for an overall support system for formative evaluation. We want to emphasize that these elements were not known to us at the beginning of the project. They only came to be articulated towards the end of our work. However, the phrases and ideas which contain the seeds of the later framework are, in retrospect, embedded in the early project documents.

Our view of formative evaluation for the NDN is that of an ongoing low-cost series of activities to be carried out by NDN'ers after some training in evaluation with a small amount of technical assistance support. These individuals are the NDN managers (either D/Ds or SFs) of their own projects. It was our hope that they would come to see evaluation as an essential and informative adjunct to their daily operations and that they would become proficient enough in the conceptual and technical

skills associated with evaluation to conduct their own small-scale, inexpensive evaluations. This process of evaluation that we had in mind could be described as "self-reflective," "problem-solving," useful," "nontechnical."

The following elements are essential in order that a formative evaluation system becomes operational within the NDN:

1. An idea of formative evaluation held by the NDN as an organization and by individual members of the NDN that see it as beneficial, safe and feasible.

2. Incentives for the NDN as an organization and for individual members of the NDN to conduct formative evaluation.

3. Instructional materials in formative evaluation that provide inexperienced individuals with sufficient guidance and sufficient flexibility to do their own formative evaluations.

4. Availability of technical assistance on an individual as well as a group basis so that individuals can develop evaluation plans to meet their idiosyncratic needs.

5. Monitoring of the implementation of a formative evaluation system along with assessment of the consequences of using such a system as a management improvement strategy.

We will discuss the emergence of the incentives for and the ideas about formative evaluation under the heading Conceptualization: A Knowledge Exchange Process. Next we will describe the production of the instructional materials which carry the content of formative evaluation under Development: A Stakeholder Strategy. Finally, we will describe the technical assistance and follow-up monitoring as Implementation: Ideas as Innovation.

Conceptualization: A Knowledge Exchange Process

Our first challenge was to combine what we knew about formative evaluation with what NDN'ers knew about dissemination. We wanted our two bodies of knowledge to become synergistic--with the whole greater than the sum of its parts. To do this we had to take the initiative by learning the language and customs of the NDN, and by introducing NDN'ers to ours.

We visited some NDN projects personally. We introduced ourselves over the phone to other project managers. We spoke at the annual meeting of the NDN within a few months after the start of our contract. We had to make clear that our role as evaluators was neither adversary nor advisory but rather facilitative of professional conversation about the benefits and costs of introducing educational professionsls to a new role --that of amateur evaluator. Small group discussions after our first presentation focused on some of the fears and concerns NDN staff had about evaluation: What did they have to do? Where would they find the time and money? How would the evaluation be both standardized enough for everyone yet adaptable to individual needs? How did our work differ from or relate to other NDN tasks which carried the term "evaluation" (such as the existing NDND requirements that D/Ds and SFs report the numbers of certain kinds of activities; the existing D/D and SF requests to adopting sites that they evaluate the impact of their newly acquired programs on student achievement, etc.)?

It became clear to us that decisions about the specific nature of formative evaluation within the NDN were embedded within other yet-to-be-made decisions about the total role of evaluation within the NDND as an

organization. We encouraged NDND attention to this problem.

Meetings, phone conversations, drafting of "issues papers" during the first four months of the project gave birth to a three-part evaluation framework within which our work would fit. The NDN as an organization would distinguish among three kinds of evaluation: management evaluation, implementation evaluation, impact evaluation. Each type would have a unique set of questions, designs, instruments, and uses associated with it, although everyone anticipated that there would be some overlap among the three.

Our formative evaluation work was to be oriented towards the improvement of project management. We argued that the evaluator and the evaluatee should be one and the same person. Evaluation data--gathered for the purpose of exploring one's own problems in managing the job of disseminating educational innovations--were to be kept confidential in one's own files. However, the performance of such an evaluation was required. The evaluation plan was to be an essential part of D/D and SF refunding proposals with points awarded according to its quality.

In the beginning, there had been little thought that the NDN leadership would have to provide incentives or requirements for doing formative evaluation. Formative evaluation--as is often the case with all kinds of evaluation--was assumed by the Division to be self-evidently rewarding. Those in leadership roles who seemed to be making such assumptions, however, were not those who were to be evaluated. Evaluation, like clean living, was presumed to be good for someone else.

After almost six months of discussion, clarification was finally achieved on an evaluation framework and specifically on incentives to do

formative evaluation. The "carrots" were seen as occurring on four levels:

1. Individual--so that each D/D or SF could find out and document his/her own successful work.
2. collegial--so that all D/Ds and SFs could learn about "what works" for everyone.
3. collective--so that the Division could describe what goes on in the NDN
4. comprehensive--so that the educational community could understand more about dissemination and school improvement

The "stick" was possible loss of funds if the evaluation was not performed.

A consensus was emerging on the purposes and characteristics of formative evaluation: the improvement of dissemination activities through evaluations which were small in size, scope and cost; nontechnical; integrated with management decisionmaking; recurring. The aim was to train NDN'ers to become amateur evaluators, to assist them in this process by developing resources specifically targeted for their use, and to support them with small amounts of technical assistance where needed.

To summarize: In this conceptualization process, CSE supplied to the NDN our knowledge of the possibilities and limitations of evaluation as we was it; we encouraged the NDN to think about the purposes, outcomes and uses for their overall evaluation framework as well as the place of formative evaluation. In turn, NDN practitioners and the NDN leadership provided us with their perception of the needs which evaluation had to serve if it was to be of benefit to them; shared with us their current level of awareness about evaluation as well as their fears that evaluation would prove at best either irrelevant or restrictive and at worst, both.

Development: A Stakeholder Strategy

Our next challenge was to move from idea to reality, from general verbal consensus to written prose. In practice, the conceptualization phase moved inexorably into the development phase without clear demarcation. After soliciting the advice of opinion leaders in the NDN, in the Division, and on our contract, we assembled a Working Group of twelve NDN people who were to meet three times to provide both direction and review. We also sent letters to all NDN'ers asking for any evaluation instruments or procedures that they might already have been using in their own evaluation efforts. To keep the organization as a whole informed of our work, we arranged for our "news" to be included in the monthly newsletter.

Our first major step was to analyze what already existed within the NDN. By classifying the forms which NDN'ers had sent to us on request, and by examining D/D and SF reapplication proposals, we made a first cut at defining the specific NDN tasks that might be formatively evaluated.

We then presented our classification of instruments at the first meeting of the Working Group. Group members advised us to include two sets of resource materials in addition to instruments--a "bank" from which D/Ds and SFs could make up their own instruments, and detailed but easy-to-follow instructions for planning and carrying out evaluations.

The resources Guidebook, then, evolved into two sections: the front dealing with instruction generic to evaluation, and the back containing materials specific to NDN formative evaluation. This latter came to include: lists of evaluation questions keyed to specific management tasks performed by D/Ds and SFs, suggestions for sampling and suggestions for instruments and items; a collection of high-quality instruments already

in use by the NDN.

Pilot testing of the first draft of the Guidebook was done by volunteers solicited by us. Our invitation and description of obligations and opportunities was accompanied by a letter of explanation and support from the NDN Director which provided us with needed legitimacy. Unexpectedly, we had more volunteers than we could accomodate. In the end, twenty-two D/Ds and SFs participated in a two-day orientation and training seminar who then used the book as a guide for planning and conducting a management evaluation of a task of their own choosing. We telephoned each of them once a month for three months to find out their problems and to answer questions. At the end of the pilot test, each pilot tester gave us an evaluation plan, a general statement of their findings and the use they intended to make of them, their comments on the utility of the Guidebook, and their suggestions for changes.

During the period of the pilot test we solicited additional revision suggestions from the project officer and principal investigator of the parent study as well as other members of the study consortium; from the Office of Education staff responsible for monitoring the NDN; from 25 reader/reviewers who responded in writing to a short questionnaire; and from two high-level consultants in evaluation.

We synthesized these results and presented them to the Working Group, getting confirmation for the general direction of the revisions. They asked that an additional category of dissemination tasks be added. This category--Certified Trainer Operations--was not only an addition to the Guidebook. It was a major addition to NDN functions that had occurred

in the nine months following completion of the first-draft materials.

In retrospect, we can see that the development strategy which evolved over our two-year work was

- interactive, evolutionary, nonlinear, and oriented towards problem-solving;
- supported by the NDN leadership and consistent with the norms and expectations of the NDN itself;
- intended, from the beginning, to lead to enthusiasm and to use of the evaluation ideas contained in the final product;
- sequenced so that the type of input sought from various NDN stakeholders and evaluation experts was appropriate to the developmental state of the Guidebook. For example, the general outlines and topics for inclusion were informed by the policy-oriented Working Group and NDN leadership. Fine tuning (changes in wording, additions to lists, etc.) happened as a result of pilot testers and reader/reviewer comments.

To summarize: In the development process we involved as many individuals as possible and as often as possible, consistent with our limits of time and resources.

"Stakeholders" in the development of our evaluation resource materials --although we have only recently come to use the term for the individuals we worked with--included the Office of Education representatives who were monitoring the project; the Office of Education personnel who both guided and monitored the D/Ds and SFs; members of the team doing the larger study of dissemination of which we were a subcontract; opinion leaders within the NDN representing experienced and new D/Ds and SFs, large and small projects, and pro- and anti-evaluation positions. Stakeholders' involvement could have become unwieldy and their input might have fragmented the coherence of the work. Neither happened. Rather, the development process became an oscillating series of adjustments. Each

new suggestion was discussed and melded, where possible, into a generally perceived image of what the final product might be.

As time passed, the image itself was brought into clear and accepted focus. By the time the final version of the Guidebook was produced and distributed, its form and substance were familiar to the approximately 50% of the NDN who had worked on it, as well as to others who had merely heard about it.

Implementation: Ideas as Innovation

Our last challange was to help NDN'ers "adopt" the Guidebook into their working lives. We did this by using with NDN'ers the model of dissemination they themselves employ with others.

The business of the NDN is the dissemination of new ideas materialized in the form of educational programs. The process by which these educational programs are moved from the site where they were invented to other new sites is called dissemination. The activities which all D/Ds undertake in disseminating their innovative programs to new sites can be loosely categorized and placed within a sequence. The categories are permeable. The sequence may vary. But usually, it starts with awareness activities--what are called, in other settings, marketing, advertising or public relations. NDN awareness activities may include mailings, presentations, informal word-of-mouth as well as special sessions for audiences likely to be interested in particular programs. Some individuals attending the awareness conferences become intrigued by the possibilities of adopting a given program in their school. Follow-up work with them by the D/D or SF may lead to an adoption agreement and then training by the D/D or school personnel. Following training, the adopting teachers begin using the

program. They may seek and receive technical assistance or support from the developer of the program (D/D) or from the state facilitator (SF) in their area.

Awareness, training and technical assistance, then, are part of a dissemination sequence which presumably leads to high-quality implementation of innovative programs.

As developers of a Guidebook containing ideas about formative evaluation new to most NDN'ers, we were encouraged by the NDN to regard this product as an innovation. We therefore intentionally engaged in dissemination activities related to awareness, training, and technical assistance* so that we might obtain high-quality implementation by NDN project managers.

Our awareness activities included entries into the NDN monthly newletters, the two mailings which requested NDN-developed evaluation instruments, our informal visits and innumerable phone conversations to D/Ds and SFs, as well as formal awareness presentation at an annual NDN conference. Almost all NDN'ers chose to come to our small group awareness sessions. They took with them brochures and Excerpts from the Guidebook. We believe that the positive reception given to our efforts far exceeded the usual reception for evaluation training materials.

Seven months later we moved from awareness to training. We conducted three regionally-based two-day training seminars to which most NDN'ers came at the invitation of the NDN Director. These sessions were formally cosponsored by the Technical Assistance Base (TAB), a group with continuing

*The planning for technical assistance occurred during the contract period. The activities themselves will occur after contract termination, depending on availability of funds.

responsibility for providing assistance to NDN'ers in the area of evaluation.

The seminars provided NDN'ers with the opportunity to obtain their copy of the Guidebook and to become familiar with its organization and content. They then had time to work out, within small groups, an individualized evaluation plan addressing an area of their own choosing.

The small groups were led by people who had either participated in the pilot test or had worked in the past with NDN projects as evaluators. These individuals had discussed their own roles and understandings of the Guidebook's view of formative evaluation on the day preceding their region's session. Some modifications were made in each session's agenda as a result of these pre-session discussion days.

In addition to achieving its overt purposes, the three training seminars served other valuable functions:

- further ventilation of general concerns about evaluation;
- continued consensus building on the benefits and costs of formative evaluation;
- public demonstration of personal and organizational commitment to formative evaluation;
- acknowledgement of peer and outside expertise in the area of evaluation;
- recognition of the need for ongoing supports for formative evaluation by the TAB.

The aforementioned awareness and training activities were carried out during the life of this contract. Planning for follow-up assistance was likewise part of this contract although execution of such assistance was not. Suggestions for such a plan were solicited and obtained informally from many NDN'ers during the training sessions; they were then

discussed with the NDN leadership and with individuals in the TAB. The activities suggested in the plan include technical assistance activities, formative evaluation of the use and impact of the Guidebook, and summative evaluation of the use and impact of the Guidebook.

Reflections

We can reflect on what we learned during our two-year experience in developing a formative evaluation system for the NDN from two perspectives: first as product developers, and second as evaluators.

From the product developer point of view, we can assert the importance of fully understanding the organizational setting and the individuals who will be using the product. While this principle is almost a cliché in product developers it is often not observed in practice. To carry it out seriously means allowing a long learning time for the developer to speak with, make presentations to, and argue with members of the potential audience; as well as to read official and unofficial documents. Among other things, the developer can then notice language use: common words and expressions which will mark his/her efforts as those of an insider or an outsider. The developer can observe the type of instructional writing with which the audience feels comfortable, for instance, the number and length of examples to accompany rules. He or she can ascertain the audience's preferred level of formality and style. The developer can identify "where to begin" in presenting the new subject to the identified audience.

A corollary to immersion learning by the developer is active involvement by members of the intended audience in the development process. Since the Guidebook we were developing was intended as a training and resource

manual, a defined group of people constituted the target audience. The credibility of the finished product, we knew, would depend in part on the process used to develop it. This was reiterated by many individuals before the Guidebook was completed. The positive reception provided to the finished Guidebook and the comments made about it seem to support the importance of the process. It is not unlikely that feelings of ownership can be established in other product development efforts through similar techniques which enlist genuine and timely participation by representatives of the potential audiences.

From the evaluator point of view, we can assert that evaluation does not seem to be a naturally occurring activity for many people. Although self-evaluation or informal judgments about people or events may be a daily or routine part of interacting with one's environment, systematic and planful data collection and analysis are not part of many educators' repertoire of skills. When presented with methods for doing systematic and planful data collection, many individuals reject the suggested effort as either redundant or irrelevant. Whether such evaluation techniques which use social science methods are applicable in a particular setting is an empirical question that may not recieve a fair hearing either because of psychological mechanisms such as anxiety or resistance or because of resource limitations on time and money. We realized that for NDN'ers to begin to engage in evaluation activities--either as the commissioners of, doers of, or subjects of--we as evaluators had to be persuasive, energizing, and supportive. We also had to be willing to subject our own beliefs and efforts to the same evaluative tests that we were asking others to contemplate: Was evaluation paying off? Was it a useful approach to improving management activities? The answers to these questions should receive the attention they deserve within the near future.